

Title (en)

Soluble fluorinated cycloalkane sulfonate surfactant additives for NH<sub>4</sub>F/HF oxide etchant solutions.

Title (de)

Lösliche Zusätze für Oxid-Ätzlösungen aus NH<sub>4</sub>F/HF mit oberflächenaktivem fluoriertem Cykloalkansulfonat.

Title (fr)

Additifs solubles pour solutions d'attaque d'oxyde à base de NH<sub>4</sub>F/HF comportant des produits tensioactifs à base de sulfonates de cyclo-alcane fluorés.

Publication

**EP 0201808 B1 19940713 (EN)**

Application

**EP 86105979 A 19860430**

Priority

US 73356885 A 19850513

Abstract (en)

[origin: US4620934A] Silicon dioxide etching solutions with soluble surfactant additives are provided. The improved silicon dioxide etchants are produced by adding soluble fluorinated surfactant additives to standard oxide etchants in the manufacture of integrated circuits. The surfactants found effective in accordance with the invention are referred to as fluorinated cycloalkane sulfonates and fluorinated cycloalkene sulfonates and have the general formula <IMAGE> where X is F, H, Cl, OH, SO<sub>3</sub>A or R and Y is F, H, OH, R or be omitted and thereby impart a double bond; wherein R is a 1 to 4 fluoroalkyl group; and wherein n has a value of up to 6. A represents as the cation group may be NH<sub>4</sub><sup>+</sup>, H<sup>+</sup>, Na<sup>+</sup>, K<sup>+</sup>, Li<sup>+</sup>, R<sup>+</sup> or organic amine cations.

IPC 1-7

**H01L 21/302**

IPC 8 full level

**C23F 1/16** (2006.01); **C04B 41/53** (2006.01); **C09K 13/08** (2006.01); **C23F 1/24** (2006.01); **H01L 21/308** (2006.01); **H01L 21/311** (2006.01)

CPC (source: EP KR US)

**C04B 41/53** (2013.01 - EP US); **C09K 13/08** (2013.01 - EP KR US); **C23F 1/16** (2013.01 - KR); **H01L 21/31111** (2013.01 - EP US)

Cited by

GB2333743A; GB2333743B; WO9817600A3

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

**US 4620934 A 19861104**; CA 1276530 C 19901120; CN 1012071 B 19910320; CN 86103055 A 19861126; DE 3689962 D1 19940818; DE 3689962 T2 19950105; EP 0201808 A2 19861120; EP 0201808 A3 19880323; EP 0201808 B1 19940713; JP H0694596 B2 19941124; JP S61266581 A 19861126; KR 860009100 A 19861220; KR 900003980 B1 19900607

DOCDB simple family (application)

**US 73356885 A 19850513**; CA 508873 A 19860512; CN 86103055 A 19860429; DE 3689962 T 19860430; EP 86105979 A 19860430; JP 10937086 A 19860513; KR 860003650 A 19860510